☐ **Cleaning** of spiral type **membrane** module used for membrane separation apparatus, comprises supplying **mixture** of **water** and **air** from lower part of container, after permeating cleaning liquid throughout surface of module.

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NOVELTY – A spiral type membrane module (MM) (30) to be cleaned is perpendicularly set in upward container (20). A cleaning liquid (CL) is injected from lower part of the container. Subsequently, pressurized air is introduced from the lower part of the container, and CL is permeated throughout film surface of MM.

DETAILED DESCRIPTION – A spiral type membrane module (MM) (30) to be cleaned is perpendicularly set in upward container (20). A cleaning liquid (CL) is injected from lower part of the container. Subsequently, pressurized air is introduced from lower part of container, and CL is permeated throughout film surface of MM. Then, **mixture** of **water** and **air** is introduced from lower part of container and made to eject from upper part of MM.

The cleaning liquid is injected from lower part of container such that 1/4th of the module is immersed in cleaning liquid.

USE – For **cleaning** spiral type **membrane** module used for membrane separation apparatus such as precise filtration apparatus, ultrafiltration equipments, or reverse osmosis membrane separation apparatus.

ADVANTAGE – The spiral type **membrane** module is **cleaned** efficiently using few amounts of cleaning liquid, without placing the module in a pressurized vessel. Therefore, the membranous ability of the module is recovered effectively.

DESCRIPTION OF DRAWING(S) – The figure shows the systematic diagram of washing apparatus used for **cleaning** spiral type **membrane** module. (Drawing includes non-English language text).
Container 20
Module 30
Dwg.1/2